QC ABSTRACT

NAME OF WORK: Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	Precast (100mm)	Core Compressive Strength	One Test		1	1
		Corrected Cylinder Compressive Strength	One Test		1	1
		Equivalent Cube Compressive	One Test		1	1
7	Drain Bottom Slab Concrete (M20)	Compressive Strength(7days and 28days)	6set /100-150 cum	113.12	12	12
8	Drain Side Wall Concrete (M20)	Compressive Strength(7days and 28days)	6 set /100-150 cum	147.43	12	12
9	Culvert Concrete (M20)	Compressive Strength(7days and 28days)	3 set /16-30 cum	22	6	6
10	Drain Side Filling Concrete (M20)	Compressive Strength(7days and 28days)	3 set /16-30 cum	18.15	6	6
11	WMM	Sieve Analysis	One Test		1	1
		Impact Value	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-02-28-105** **Date: 09-11-19**
Project Name	:	Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division
Agency	:	Executive Engineer, KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/YnkZone/WO/68/2019-20
Date of Receipt	:	06-11-19
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	07-11-19
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

SLNo.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.76	–
2	Finess by Air permeablity method (m^2/kg,Min)	292.2	225m^2/kg, Min
3	Density (gm/cc)	3.12	–
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	280 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

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Authorized Signatory
Quality Manager

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-02-28-105** **Date: 05-12-19**
Project Name	:	Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division
Agency	:	Executive Engineer, KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/YnkZone/WO/68/2019-20
Date of Receipt	:	06-11-19
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	07-11-19
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	58.5N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-02-28-105** **Date: 09-11-19**
Project Name	:	Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division
Agency	:	Executive Engineer, KRIDL, Bangalore.
Customer's Reference	:	EE(Project)/YnkZone/WO/68/2019-20
Date of Receipt	:	06-11-19
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	06-11-19

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	247	247	1.6	98.4	90-100
3	20 mm	7874	8121	54.1	45.9	30-70
4	10 mm	3898	12019	80.1	19.9	10-35
5	4.75 mm	2587	14606	97.4	2.6	0-5
6	Pan	394	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-02-28-105** **Date: 09-11-19**

PHYSICAL PROPERTIES

SLno	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.3	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.8	
3	Specific Gravity	2.64	–
4	Bulk Density(Loose) (Kg/l)	1.37	–
5	Bulk Density(Compacted) (Kg/l)	1.48	–
6	Water Absorption(%)	0.26	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2020-02-28-105 **Date: 08-11-19**

Project Name : Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division

Agency : Executive Engineer, KRIDL, Bangalore.

Customer Reference : EE(Project)/YnkZone/WO/68/2019-20

Date of Receipt : 06-11-19

Sample Type/ Size : 20mm down size coarse aggregate

Reference to BIS codes : IS: 383:2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1,3,4) RA2011
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
IS 2386 Part 4: Mechanical Properties

Date of test : 06-11-19

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	297	297	5.9	94.1	90-100
3	10 mm	2643	2940	58.8	41.2	25-55
4	4.75 mm	1812	4752	95.0	5.0	0-10
5	Pan	248	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-02-28-105** **Date: 08-11-19**

PHYSICAL PROPERTIES

Slno	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**8.8**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**11.3**	
3	Specific Gravity	**2.62**	_
4	Bulk Density(Loose) (Kg/l)	**1.44**	_
5	Bulk Density(Compacted) (Kg/l)	**1.49**	_
6	Water Absorption(%)	**0.37**	_
7	Aggregate crushing Value(%)	**24.6**	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	**25.2**	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-02-28-105** **Date: 08-11-19**

Project Name : Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division

Agency : Executive Engineer, KRIDL, Bangalore.

Customer's Reference : EE(Project)/YnkZone/WO/68/2019-20

Date of Receipt : 06-11-19

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 06-11-19

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2020-02-28-105 Date: 08-11-19

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	–
2	Specific Gravity	2.59	–
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST RESULTS OF STEEL

...n ID	:	**CP-2020-02-28-105** **Date: 13-11-19**
...ject Name	:	Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division
...ency	:	Executive Engineer, KRIDL, Bangalore.
...tomer's Reference	:	EE(Project)/YnkZone/WO/68/2019-20
...te of Receipt	:	11-11-19
...mple Type	:	Sunvik
...ference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
...te of test:	:	11-11-19

...No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	16	1.581	572	674	19.0%	Satisfactory	Satisfactory

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TEST REPORT OF PRECAST COVER SLAB

ID	:	**CP-2020-02-28-105** **Date: 25-11-19**
ject Name	:	Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division
ency	:	Executive Engineer, KRIDL, Bangalore.
mmer's Reference	:	EE(Project)/YnkZone/WO/68/2019-20
te of Receipt	:	21-11-19
ple Type /Size	:	Precast Cover Slab (100mm)
ference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
te of Test	:	21/11/2019

Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
	(mm)	(mm)	(kg)	(Sq.mm)	(KN)	(N/mm^2)	(N/mm^2)	(N/mm^2)
Cover Slab-1	75.51	100.48	1.116	4477	80.9	18.1	16.8	21.0
Cover Slab-2	75.49	100.52	1.122	4475	82.3	18.4	17.1	21.4
Cover Slab-3	75.50	100.51	1.118	4476	81.5	18.2	16.9	21.2

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 25/11/2019

: **CP-2020-02-28-105**

: Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/YnkZone/WO/68/2019-20

: 20-11-19

: Drain Bottom Slab Concrete

: 150X150X150 mm

: M20 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 25/11/2019

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Slab Concrete	M20	18/11/2019	25/11/2019	151.63 X 151.14 X 150.31	22917	**8.616**	433.5	18.9	18.5
Drain Bottom Slab Concrete	M20	18/11/2019	25/11/2019	151.10 X 151.16 X 151.44	22839	**8.045**	413.1	18.1	
Drain Bottom Slab Concrete	M20	18/11/2019	25/11/2019	150.13 X 149.70 X 150.49	22475	**8.556**	413.9	18.4	

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-02-28-105** **Date: 16/12/2019**

: Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/YnkZone/WO/68/2019-20

: 20-11-19

: Drain Bottom Slab Concrete

: 150X150X150 mm

: M20 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 16/12/2019

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Slab Concrete	M20	18/11/2019	16/12/2019	150.23 X 149.25 X 149.21	22422	**8.947**	523.3	23.3	23.3
Drain Bottom Slab Concrete	M20	18/11/2019	16/12/2019	150.26 X 151.95 X 149.23	22833	**8.689**	521.3	22.8	
Drain Bottom Slab Concrete	M20	18/11/2019	16/12/2019	151.10 X 149.46 X 149.38	22583	**8.703**	537.9	23.8	

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TEST REPORT OF CEMENT CONCRETE CUBES

Date: 25/11/2019

: **CP-2020-02-28-105**

: Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/YnkZone/WO/68/2019-20

: 20-11-19

: Drain Bottom Slab Concrete

: 150X150X150 mm

: M20 / 7 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 25/11/2019

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Slab Concrete	M20	18/11/2019	25/11/2019	151.68 X 150.97 X 151.60	22900	**8.616**	420.9	18.4	18.7
Drain Bottom Slab Concrete	M20	18/11/2019	25/11/2019	151.23 X 151.57 X 149.96	22921	**8.045**	434.2	18.9	
Drain Bottom Slab Concrete	M20	18/11/2019	25/11/2019	151.07 X 150.69 X 151.53	22765	**8.556**	428.0	18.8	

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TEST REPORT OF CEMENT CONCRETE CUBES

: **CP-2020-02-28-105** **Date: 16/12/2019**

: Improvements to CC Roads and CC Drains works at Vinayakanagara in Ward No.05 Byatarayanapura Sub Division

: Executive Engineer, KRIDL, Bangalore.

: EE(Project)/YnkZone/WO/68/2019-20

: 20-11-19

: Drain Bottom Slab Concrete

: 150X150X150 mm

: M20 / 28 Days Compressive Strength

: IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

: 16/12/2019

Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
Drain Bottom Slab Concrete	M20	18/11/2019	16/12/2019	150.84 X 150.86 X 151.10	22756	**8.947**	531.6	23.4	23.0
Drain Bottom Slab Concrete	M20	18/11/2019	16/12/2019	151.91 X 149.78 X 149.11	22754	**8.689**	504.7	22.2	
Drain Bottom Slab Concrete	M20	18/11/2019	16/12/2019	150.00 X 151.14 X 151.55	22671	**8.703**	533.0	23.5	

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